CYCLONIC DEPRESSION AND FLOOD IN JAMAICA.

By MAXWELL HALL. Dated Jamaica, June 15, 1904.

We have just experienced at the west end of the island of Jamaica one of those barometric depressions which give us flood rains, but this time the force of the wind was far greater than usual, and as there had been a large rainfall prior to its appearance, the consequences were disastrous floods, which have done great damage to roads and bridges.

The center, which on June 8 was far south of the Kempshot Observatory, took a curved path around the west end of the island at the very slow rate of about a mile an hour, so that on June 13 the center was north of Kempshot and not very far away. The wind then blew steadily at 60 miles an hour, with maximum gusts of about 70 miles an hour as measured by the pressure plate, and about 5.63 inches of rain fell, but about twice that amount fell in the river valleys in the neighborhood.

The lowest barometric pressure was at 7 a. m., on the 13th, when the fall was only 0.30 inch below the mean; and it seems extraordinary that such a small fall should produce such results, unhappily extended over a large area. The large, handsome, mason-work bridge of five wide-spanned arches over the Montego Bay River has been carried away after an existence of over a hundred years, and the west end of the island was completely cut off in consequence. There is now no storm-warning system on the island; if there had been, the announcement of the approach of a cyclonic depression two days before the 13th, might have saved great personal inconvenience in many cases.

The nature of these depressions has been shown in a pamphlet on "The Meteorology of Jamaica," recently published by the Institute of Jamaica. They often pass near or over Jamaica; sometimes they develop into cyclones; sometimes they fill up and disappear. The following readings taken at the Kempshot Observatory, near Montego Bay, may be interesting.

The last readings show that the depression was developing and proceeding more or less northeast. The mean barometric pressure at this season is 29.932 inches.

Observations made at the Kempshot Observatory.

June, 1904.	Hours.	Barometric pressure.	Wind, miles per hour.	Wind, miles in 24 hours.	Rain.	Notes.
		Inches.			*Inches.*	
8th	7 a. m.	29.886	e. 5	190	1.12	
	3 p. m.	29.891	ne. 3			
9th	7 a. m.	29.940	e. 5	273	0.83	Raining all day.
	3 p. m.	29.891	se. 7			
10th ...	7 a. m.	29.857	e. 6	221	1.22	Gusts up to 38 miles per hour.
	3 p. m.	29.881	se. 4			
11th ...	7 a. m.	29.829	sse. 7	266	0.00	Cyclonic appearance of weather.
	3 p. m.	29.831	sse. 6			
12th ...	7 a. m.	29.791	sse. 15			
	3 p. m.	29.846	sse. 15	478	0.43	Gusts up to 39 miles per hour. This rain fell early on the 13th.
	7 p. m.	29.781	s. 25			
13th ...	5 a. m.	29.657	s. 50			Heavy squalls with rain.
	7 a. m.	29.634	s. 60			Gusts up to 70 miles per hour. Heavy rains.
	9 a. m.	29.709	ssw. 60			
	11 a. m.	29.724	sw. 20			Clouds lifting.
	1 p. m.	29.757	sw. 20	420	5.20	Squalls at times.
	3 p. m.	29.776	sw. 15			
	5 p. m.	29.768	sw. 15			Clearing.
	7 p. m.	29.764	sw. 10			Clearing.
14th ...	7 a. m.	29.825	ssw. 5			

The observatory is in a very exposed position, 1773 feet above the sea level; the barometric pressure is the reading of the barometer reduced to the standard of 32°, sea level, gravity, Kew correction; and further corrected for diurnal variation.

The cloud system was fracto-stratus flying with the wind under a dense high canopy of uniform cirro-stratus, whose motion, if any, could not be ascertained.

THE FIRST ELECTRIC STORM RECORDED AUTOMATICALLY IN ST. LOUIS, MO.

By Rev. JOSÉ ALGUÉ, S. J., Director of the Philippine Weather Bureau.

The thunderstorms of Friday, June 3, 1904, were unusually severe and fully realized the predictions of the local forecaster of St. Louis, Edward H. Bowie. In the Philippine Weather Bureau station, at the World's Fair, there are two lightning recorders: one devised by Rev. Father Frederic Odenbach, S. J., director of the meteorological observatory in St. Ignatius College, Cleveland, Ohio, which has worked there very satisfactorily since the year 1902, and another invented by Rev. Father Fenyi, S. J., director of the Kalocsa Observatory, Hungary, which is of the type of the one erected in the Manila Observatory in 1903. Father Odenbach's ceraunograph, as he calls his instrument, was not yet set for operation. The Fenyi lightning recorder had been ready for work since June 2. It has registered with great accuracy the electric storms of Friday, June 3, and Saturday, June 4. As the instrument is an entirely new one and works on the same principle as those for wireless telegraphy, it will be interesting to study the simultaneous records of this instrument and of some of the other meteorological instruments. The collector of the instrument consists of a copper wire which stretches horizontally between the poles at the summit of two steel towers erected near the station and about 110 feet apart. The height of the horizontal wire is 105 feet. One extremity of the wire ends in the pole, and the other is brought from the other pole to the receiver of the recording instrument, the essential part of which is the coherer, which consists of two small chains of steel wire two inches long, through which the Hertzian current has to pass. The registering pen is attached to the armature of the magnet which decoherizes the steel chains by knocking them. The pen at every movement of the armature makes a little mark perpendicular to the spiral on the cylinder, which moves by clockwork at the rate of nine and one-half inches per hour.

To understand perfectly the records[1] of the different instruments shown on the accompanying plate, fig. 1, a few words on the prevailing conditions in the weather before the storm occurred will be necessary. Two well-defined storm centers covered the region west of St. Louis; one to the west-northwest over western Nebraska, and the other to the southwest over northwest Texas and New Mexico. According to the weather map thunderstorms were reported to the south-southwest, west, and northwest of St. Louis, at an average distance of 400 miles, at 7 a. m. (central time) Friday, June 3. About that time the sky was clear and fine in St. Louis, but clouds began to appear about 8 a. m. and cloudiness gradually increased until 9 a. m. According to the record of the wind's velocity it increased from 9 to 10 a. m., the maximum being registered between 10 and 11 a. m. from the southwest. At $10^h\ 41^m$ a. m. the first spark[2] affected the coherer and the instrument began to work. No thunder could be heard. Rain began to fall at 10:30 a. m. and continued until noon at the rate of about two millimeters an hour while electric sparks were registered; about 80 sparks occurred from 10:41 to 11 a. m. and about 140 from 11 a. m. to noon; at this time the intensity of the storm increased, as far as electric display and rain is concerned, but the wind abated decidedly up to 2 o'clock. Ten minutes after noon the electric display was terrific, sparks being registered almost every second. Shortly before 1 o'clock the storm diminished and the wind veered to the southwest. Another electric storm, more intense than the former, developed a few minutes before 2 o'clock. Precipitation, which had ceased at about 1 o'clock, began again with renewed intensity at twenty minutes past one; the wind continued from the southwest up to 3 p. m., when it veered to the south again, followed by a very decided fall in atmospheric pressure. The last spark was registered at 4:31 p. m.

[1] It was not practicable to reproduce these records directly, and a copy was made by hand. While substantially accurate, the figure does not show the exact appearance of the record, as made by the instrument.

[2] Of course this spark at the coherer should not be counted as a flash of lightning, as it merely represents a very slight difference of potential between the horizontal wire and the ground. That difference may be due either to the occurrence of a true flash of lightning anywhere within a radius of 100 miles or the passage near the wire of a cloud or mass of air charged with free electricity.—*C. A.*

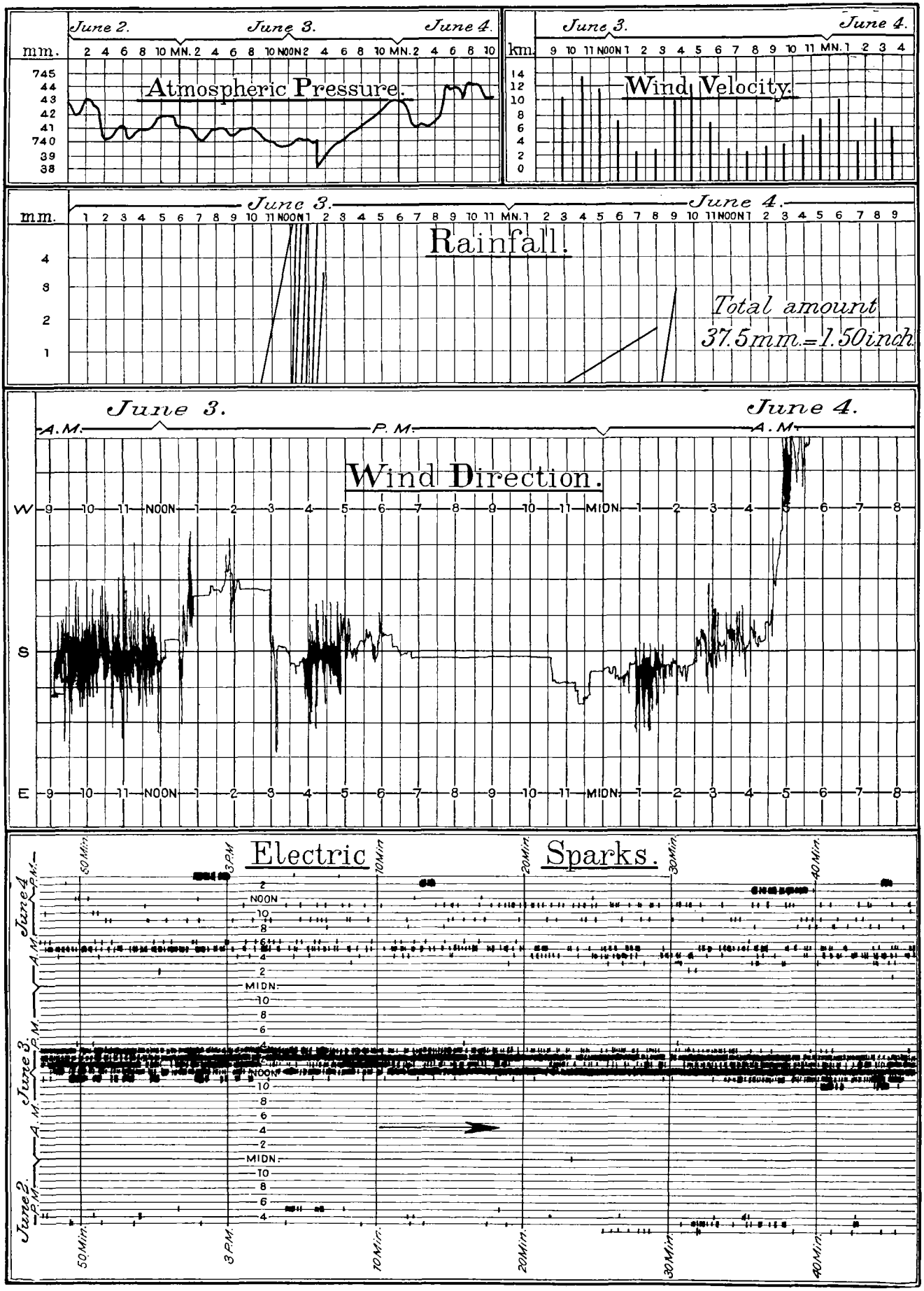
Atmospheric Pressure.
Wind Velocity.
Rainfall.
Total amount
37.5mm.=1.50inch.
Wind Direction.
Electric Sparks.

FIG. 1.